Sudduth

[54] KEYBOARD, DIGITAL CODING, SWITCH FOR DIGITAL LOGIC, AND LOW POWER DETECTOR SWITCHES

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Related U.S. Application Data

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[58] Field of Search200/166 C, 166 H, 159 R, 200/159 B, 168 G, 86 R, 166 PC, 5 R, 5 A, 83 R, 83 N; 179/90 K

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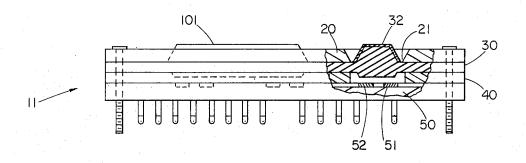
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[57] ABSTRACT

Electric switches are described in which a resilient, electrically conductive, elastomeric member is spaced adjacent but apart from contact means; among features are the elastomeric connector; of sheet form; on metal contacts as a movable contact bridge; defining a simple and durable multiple switch array including a keyboard, a digital coding assembly and a detector; and as the means, especially with proper selection of distributed conductive particles in the elastomer for limited conductivity, of eliminating the electrical effects of bounce in solid state electronic logic circuitry and the like. Fabrication of the switch as a simple, thin compact laminate using printed circuit boards is shown using the preferred silicone elastomer and carbon filler. In preferred embodiments pressure against conductive elastomer sheet means will cause it to connect to a contact element conductively and release of pressure will cause the sheet means to disconnect. The sheet means can be used as a floating connection for one or more circuit elements, and in this form has particular application in a keyboard assembly, particularly in connection with replaceable printed circuit boards and in digital coding techniques with a single printed circuit board. Preferably, the sheet means resiliently, reversibly deforms from first to second conditions, typically engaging the contacts in the deformed or bulged condition. Preferably in one condition the sheet means takes a planar form, positioned by a spacer layer from the contacts. And preferably the contacts are elements of a printed circuit.

33 Claims, 22 Drawing Figures



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